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SCARLATINA AND SCARLATINIFORM ERUPTIONS FOLLOWING INJURIES AND OPERATIONS.[1]

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ALTHOUGH reports of scarlatina and scarlatinoid eruptions following injuries and surgical operations were to be found in medical literature, general attention was more especially attracted to them by Sir James Paget in 1864 in a clinical lecture. In his "Clinical Lectures and Essays" (1875) he devotes a chapter to the subject. He says: "There is something in the consequences of surgical operations which makes the patients peculiarly susceptible to the influence of the scarlet fever poison." In France, Trélat[2] was the first to accept the views of Paget concerning the nature of these rashes, though they had already been observed by Civiale, Germain Sée, Tremblay, and others. Rashes more or less resembling scarlatina were reported by Jonathan Hutchinson, Hilton, Bryant, Lea, Moore, and others, and in St. George's Hospital Reports for 1879 is a notable article by Stirling, in which the subject is considered. Scarlatinoid rashes in surgical cases had generally been considered to be of septicæmic origin. In Guy's Hospital Reports for 1879 appeared two papers supporting the proposition that an especial liability to scarlatina is shown by those who have recently sustained injuries or undergone surgical operations. The first of these, "A Contribution to the Etiology in Scarlatina in Surgical Cases," by W. E. Paley, was communicated by Goodhart with observations. It was based upon records of Evelina Hospital for Sick Children, and contained the reports of twenty-five cases. Of these patients, nineteen were shown to have been exposed to scarlatina, and of the remaining six, all save one had possible sources of infection. Goodhart, however, was careful not to assert that all such red rashes should be attributed to scarlatina. The scarlatinous nature of the cases reported in the paper will be everywhere admitted. The second paper was by House, and is based upon four cases of surgical scarlatina, occurring epidemically in Guy's Hospital. The epidemic ceased upon the establishment of isolation, and its scarlatinal nature cannot be doubted. While this author does not venture to affirm that there is *not* "such a thing as a rose rash in a typical case of septicæmia," he

[1] Read before the American Dermatological Association at Greenwich, August 26, 1886.

[2] Le Progrès Médical, Sept. 14, 1878.

believes "that the more these cases are studied, especially when the disease occurs in groups of cases and in patients that have been dressed antiseptically, the deeper will become the conviction that they have little in common with true septicæmia, and that they all originate in the first place in a true scarlatinal infection." Riedinger,[1] who reported ten cases of scarlatina after wounds and operations, reached his diagnosis from symptoms, and was only in one case able to trace a contagious influence. He also concluded that there exists in wounded persons a predisposition to scarlatina. At the International Medical Congress of 1881, in London, Mr. Howard Marsh and Riedinger re-affirmed this opinion, and, in the succeeding discussion, Holmes and Goodhart coincided with their views; the former, however, declared that many cases of "surgical scarlet fever" are due really to pyæmia and other causes.[2] It appears, therefore, that most recent writers decidedly incline to the opinion that these eruptions are generally dependent upon true scarlatina. When any tendency toward epidemic prevalence is shown, every one will agree with such conclusions—as much cannot be said of these rashes when occurring in isolated cases. Broadly speaking, all debilitating causes predispose those influenced by them to attacks of infectious disease. Is this more especially true of scarlatina?[3] A glance at Paley and Goodhart's figures is instructive. Of twenty-five cases observed, scarlatina attacked seventeen after operation; seven of them were without any wound whatever, and one had an old sinus only. Many of the cases of other writers had no external wound whatever. Unfortunately, reporters most rarely note whether their patients had ever previously had scarlatina. Most children, when first exposed to the contagion of this disease, become infected; is it remarkable that they are unable to withstand it when it attacks them weakened by injury or surgical operation? Trent, indeed, reasoning from imperfectly considered and insufficient data, has concluded that scarlatina is less apt to attack surgical cases than others.[4]

But, apart from epidemic influences, it is probable that scarlatiniform eruptions in the wounded may justly, in a large proportion of cases, occur quite independently of scarlatina. Rashes of septicæmic origin are well known to occur. Various fugitive eruptions often develop under nervous irritation of indifferent origin, as when they proceed from certain topical influences, or from various ingesta, whether as food or medicines, or, finally, from strong emotional disturbance. Urticaria and erythema not rarely follow surgical operations. Spencer Wells has seen a rash like that of scarlatina cover a woman's body in less than a quarter of an hour

[1] Centralbl. f. Chirurg., No. 9, vii., 1880, 134.

[2] See Transactions, vol. iv., p. 177.

[3] Paley's figures show a like predisposition to measles under similar conditions.

[4] Centralbl. f. Chirurg., No. 18, vii., 1880, 291.

after the application of perchloride of iron to a cauliform excrescence of the uterus. One patient always developed urticaria upon the introduction of the speculum.[1] Such idiosyncrasies are not uncommon.

The rashes of septicæmia are, it is true, usually urticarial in character, but often enough are erythematous, when they appear as large plaques, mingled or not with urticarial wheals, scattered irregularly over the body and of uncertain duration. It must be admitted that true scarlatiniform septicæmic rashes are not common.[2] But there seems to be excellent evidence that they do occur. How, otherwise than upon a theory of sepsis, using the term in a broad sense, are we to account for cases such as the following: Konetschke[3] treated a boy nine years old for compound fracture of both bones of the leg. The wound was dressed antiseptically as far as practicable. Two days after the injury (Aug. 14), the temperature was 40° C. (104° F.), and there appeared over the whole surface an exquisite scarlatina eruption, which was intensely red on the next day, and showed numerous miliary vesicles. This lasted six days and was followed by lamellar desquamation. Again on Aug. 26 the temperature rose (39.5° C.), and the scarlatiniform rash again appeared, lasting, however, only two days. Decided scaling again followed. Elevated temperature was again noted on Sep. 3d (39.2 ° C.), and a very characteristic rash again developed, lasted four days, and again desquamation followed. There was at no time angina or swelling of the submaxillary glands. There was no scarlatina in the neighborhood, and no extension of the disease took place. Equally discordant with a theory of scarlatinal origin is the following case reported by Ffolliott :[4] A private soldier of the garrison of Ali Musjid was burnt in an explosion of gunpowder on the face and arms and on the left hip and internal surface of the thigh. On December 25, four days after the accident, he had considerable constitutional disturbance, and a bright scarlet eruption appeared upon the belly. By the next day his whole body was as red as a boiled lobster. The temperature, at first 101° F., fell as the eruption developed. This disappeared in four or five days and was followed by general desquamation. The disorder was regarded as scarlatina by several medical officers. But the man had been three years in India ; there was no scarlatina in camp, and Mr. Ffolliott had not seen or heard of a case in twelve years' service in India. Moreover, scarlet fever is a

[1] Consult also Batut, Thèse de Paris, 1882, No. 349.

[2] It is remarkable that a scarlatiniform rash is apt to follow lithotomy. Thomas Smith saw it seven times in forty-three lithotomies. Maunde, Broadbent, Callender, and others have seen it. Curiously, the rash in these cases often begins around the wound.

[3] Wien. Med. Presse, 23, 1882, p. 1483.

[4] Brit. Med. Journal, i., 1879.

disease practically unknown in that country.[1] Attempts have been made to establish a differential diagnosis for this surgical rash. Cheadle,[2] for example, claimed that in "surgical erythema" (1) there is no swelling of the tonsils, no enlargement of the glands, though the fauces may be reddened; (2) the strawberry tongue is absent; (3) the rash is not often universal, but is confined to the body and parts covered with clothes, the face remaining uninvolved; the eruption rarely lasts twenty-four hours, and is never followed by desquamation. These points are of no value. George May, Jr.,[3] thought he could diagnosticate the non-scarlatinous surgical eruption by the absence of the boiled-lobster appearance of the skin and by the mild lingual and faucial symptoms. Subsequently, however, he candidly admitted that the case that had served as a text for the expression of this opinion turned out to be one of true scarlatina.

A final etiological factor in the production of scarlatiniform eruptions is the ingestion of various drugs. These eruptions have received from numerous writers passing reference in this connection, but by no means the attention to which they are entitled. Scarlatiniform rashes may be evoked by the ingestion of belladonna, copaiba, opium, and morphia, chloral, mercury, and other drugs, but, above all others, as bearing upon our present subject, of cinchona and its alkaloids. These preparations are those most frequently given to persons who have been injured or subjected to surgical operations, and, beyond question, eruptions induced by them are often attributed to other causes. The quinine eruptions are only beginning to receive due attention, and are much more common than is generally supposed. They usually show the features of urticaria or simple erythema, and are associated with an interesting series of general phenomena. Other eruptive forms are also observed, but the one that concerns us at present is the scarlatiniform rash. This is not especially uncommon, and doubtless many obscure cases of "idiopathic," and "septicæmic," and "surgical" scarlatiniform rash should be properly attributed to it. This rash has been described now by many writers, among whom may be mentioned Bussy,[4] Levassor,[5] and, more especially, Morrow.[6] It may exactly resemble scarlatina. Persons possessing the idiosyncrasy often develop it after even the smallest doses of the drug. At the onset it often cannot be distinguished from scarlatina. Beginning with high fever, and often with sore throat, the eruption appears upon the chest, face, and neck, and within twenty-four hours the entire sur-

[1] Hirsch, "Historisch-Geographische Pathol."
[2] Brit. Med. Journal, ii., 1879, p. 75.
[3] Brit. Med. Journal, ii., 1878, 919.
[4] Thèse de Paris, 1879.
[5] Thèse de Paris, 1885.
[6] New York Med. Journal, xxxi., 1880, p. 244.

face presents the bright scarlet color that resembles that of a boiled crab or lobster. At the end of this period the resemblance may be made perfect by the appearance of the "strawberry tongue." Up to this point, in default of a knowledge of the patient's idiosyncrasy, the diagnosis may remain impossible. Rarely it remains so throughout the attack, especially when the ingestion of the cinchona preparation is continued. Usually, however, after thirty-six to forty-eight hours the type of normal scarlatina is departed from. The fever rapidly decreases; the angina, which has never been proportionate to the other symptoms, disappears, and the rash either begins to fade or to acquire features unlike those of true scarlatina. It becomes duller in color, more papular in character, and often shows a tendency to form miliary vesicles. Eventually, it may come to resemble ordinary "prickly heat." Such a course, however, is by no means always pursued, and the scarlatinoid features are preserved. In either case, a copious desquamation is sure to follow. This is usually lamellar and may show a glove- and slipper-like exfoliation of the epidermis of the hands and feet. Even albuminuria has been known to add to the embarrassment of the diagnostitian. The writer has several such cases in mind and is convinced that a closer scrutiny will lessen the number of cases of so-called "idiopathic scarlatiniform erythema," of "septicæmic scarlatiniform rash," and of isolated "surgical scarlatina," by enabling the observer to assign them to their true cause.

The foregoing considerations would seem to justify the following conclusions:

1. Unprotected persons who have suffered injury, or who have undergone surgical operations, are rather more liable to scarlatina than the unprotected healthy. This increased liability is probably due to diminished power of resistance from disease, and will probably hold with regard to other specific fevers. Scarlet fever is more apt than the other exanthemata to attack such persons, because its influence is usually more widespread, and because it varies within such wide limits that it often escapes the attention of those who readily detect other infectious disorders, and provide against them.

2. When an epidemic tendency of the symptoms we have been considering to prevail after injuries and operations is shown, it may be concluded with confidence that true scarlatina is present.

3. Septicæmia is occasionally accompanied by a scarlatiniform rash which does not depend upon the scarlatinal poison.

4. Medicinal eruptions, especially those from cinchona and its preparations, not infrequently follow injuries and operations. These rashes are probably for the most part usually attributed to true scarlatina or septicæmia.

In obstetrical practice, scarlatina is unquestionably capable of exter-

ing a most noxious influence, but as the distinctly scarlatinal symptoms are here decidedly less important than the obscure and dangerous systemic symptoms that the virus seems to induce, the writer does not presume to enter upon the discussion of this branch of the subject before this Association. He inclines strongly to the opinion, however, that in so far as concerns a distinctly scarlatinal rash in these cases, the line of argument followed in this paper is equally applicable.

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